

PATENT CLAIMS

1. Muffler device (1) of a motor vehicle, with muffler (2, 3) and actuator (4) for changing the flow resistance of the exhaust gases flowing through, in order to change the damping characteristic,
wherein
the actuator (4) is provided in a flow branch (5) with an inlet (6) and two outlets (7, 8), each outlet (7 or 8) being connected by a pipe (9 or 10) to a muffler (2 or 3), and the throughflow cross section (D) of the inlet (6) being variable by means of the actuator.
2. Muffler device according to claim 1, wherein the two mufflers (2, 3) are of like construction.
3. Muffler device according to claim 1 or 2, wherein the pipes (9, 10) have an equal throughflow cross section.
4. Muffler device according to one of claims 1-3, wherein the outlets (7, 8) of the pipe branch (5) are designed to be symmetrical with respect to the axial axis (11) of the inlet (6) of the pipe branch, and the actuator (4) extends along and symmetrically of the axial axis of the inlet.
5. Muffler device according to one of claims 1-4, wherein the actuator (4) is at least largely constructionally united with the pipe branch.
6. Muffler device according to one of claims 1-5, wherein the actuator (4) is prestressed, in the direction of its closing position which largely closes the inlet (6), by a spring (12), preferably a compression spring, and is movable, when the gas pressure (p) of the flowing exhaust gas is increased before the inlet (6), against the force of the spring into an open position releasing the inlet.
7. Muffler device according to one of claims 1-6, wherein the actuator (4) has a closure member (14) which can be brought into engagement with the inlet,

and which has on the periphery at least one indentation (15), preferably two indentations (15) equally distributed on the periphery.

8. Muffler device according to one of claims 1-7, wherein the actuator (4) has a closure member (14) which can be brought into engagement with the inlet, and which has axial passages, which are preferably equally distributed over the cross section of the closure member.
9. Muffler device according to one of claims 1-8, wherein the actuator has a closure member which can be brought into engagement with the inlet, and which has a diameter such that in the closed position a peripheral gap (s) to the internal diameter of the inlet (6) remains free.
10. Muffler device according to one of claims 1-9, wherein the actuator (4) is a control valve with a valve plunger (13), the closure member (14) being a flattened, conical or hemispherical valve disk or valve member.
11. Muffler device according to one of claims 1-10, wherein the actuator (4) is a passive control element and automatically reaches its opening position due to the force of the counter-pressure (p).
12. Muffler device according to claim 11, wherein the force of the counter-pressure (p) is exerted directly on the cross-sectional surface, exposed to the exhaust gas flow (S), of the closure member (14) of the actuator (4), against the force of the spring (12).
13. Muffler device according to claim 11, wherein the force of the counter-pressure (p) is exerted on a separate actuating element (16) of the actuator (4), to move the actuator (4) into its opening position.
14. Muffler device according to claim 13, wherein the actuating element is a pressure container, the pressure side (17) of a diaphragm in the pressure container being connected via a pressure duct to the counter-pressure (p) before the inlet of the pipe branch, while the spring (12) is arranged in the

pressure container on the low pressure side (18) of the diaphragm, and the middle of the diaphragm is connected to the actuator, in particular to the free end of the valve plunger (13) of a disk valve.

15. Muffler device according to one of claims 1-10, wherein the actuator (4) is an active control element and has a separate actuating element (16) which can be driven by the control electronics of the motor vehicle engine.
16. Muffler device according to claim 15, wherein the actuating element (16) is a low pressure container, the low pressure side (18) of a diaphragm (19) in the low pressure container being connected via a control duct (20) to a vacuum pump or to the intake pipe of the motor vehicle engine, and the middle of the diaphragm being connected to the actuator (4), in particular to the free end of the valve plunger (13) of a disk valve.
17. Muffler device according to claim 16, wherein the pressure side (17) of the diaphragm (19) of the low pressure container has a housing vent bore and thus atmospheric pressure, or is directly exposed to the atmosphere.
18. Muffler device according to claim 16 or 17, wherein the spring (12) is arranged on the low pressure side (18) of the diaphragm (19) in the low pressure container.
19. Muffler device according to one of claims 16-18, wherein at least one electromagnetically operable on/off valve (21) or a steplessly controllable pressure regulating valve is arranged in the control duct (20), and is respectively driven by the control electronics of the motor vehicle engine.
20. Muffler device according to claim 19, wherein the electromagnetically operable on/off valve (21) is a 3/2-way valve, and has a first connection (22) to the intake pipe or to a vacuum pump, a second connection (23) to the low pressure side (18) of the low pressure container, and a third connection (24) to the atmosphere, the first connection (22) being connected to the second connection (23) in a first valve position, and the second connection

~~(23) being connected to the third connection (24) in a second valve position.~~

21. ~~Muffler device according to one of claims 1-20, wherein the actuator (4) has a valve plunger (13) which is guided, sealingly and displaceably, through a sealing plug (27) in a partition (25) of the pipe branch (5) between the two outlets (7, 8) along the axial axis (11) of the inlet (6), outward as far as a spring housing containing the spring (12), or is secured to the stiffened, flattened diaphragm middle (28) of the diaphragm (19) on the pressure side (17) of the pressure container or low pressure container.~~
22. ~~Muffler device according to claim 21, wherein the sealing plug (27) is sealingly received in a hollow-cylindrical housing section (29) of the spring housing or of the pressure container or low pressure container, and is secured to the housing section (29) on the partition (25).~~

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